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EXAMINER

BLOUNT, STEVEN

ART UNIT

PAPER NUMBER

3726

DATE MAILED: 02/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/601,382

Applicant(s)

Rybarat et al

Examiner

Blount

Group Art Unit

3726

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 1/14/62
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 14-26 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 14-26 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____
 - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 16 and 23 are rejected under 35 U.S.C. 112 second paragraph for failing to particularly point out and distinctly claim the subject matter which the applicant regards as their invention.

In claim 16, the applicant has broadly stated that the entire process is carried out to such an extent that optical quality is obtained, yet has not recited a specific process which allows this end result to occur, ie, that optical quality may be obtained by the machining process, by using a particular methodology during the cutting process, etc. and as such, the claim is highly indefinite.

With regard to claim 23, it is stated that the blade has “a die which does not have abrasive grit therein, yet the blade is a carrier for a separate polishing abrasive. Further, the polishing abrasive is said to be distributed in the microreliefs”. This statement is confusing.

Claim Objections

3. Claim 21 is objected to because of the following informalities: wherein is an improper spelling. Appropriate correction is required.

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14, 16-20, and 22-25, are rejected under 35 U.S.C. 103(a) as being obvious over U.S. patent 4,016,855 to Mimata.

With regard to claim 14, Mimata teaches forming semiconductor wafers by machining (moving a tool translationally) as shown in figure 1. Mimata also teaches that “and then the wafer is segmented into pellets and then removed from the wafer support to obtain individual semiconductor pellets”. The examiner notes that the wafers are inherently cut from the support, and that such cutting operations are commonly known in the art. Mimata does not however teach carrying out this process in order to form microreliefs. However, the type of object formed is merely an intended use for the process, and a variety of other such objects could be formed using the same process, and it would have been obvious to one of ordinary skill in the art at the time of the invention to have formed microreliefs using this process instead of the wafers simply by changing the dimensions of the objects formed.

With regard to claim 16, the process can be carried out in such a manner that “optical quality” is obtained.

With regard to claim 17, a single tool is used in Mimata.

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With regard to claim 18, Mimata teaches the invention as described above, but does not explicitly teach using a plurality of tools. Official Notice is taken that it is well known in the art to include a multiplicity of work tools to carry out an operation, and that it would have been obvious to one of ordinary skill in this art to have used more than one tool to cut the grooves, in view of this fact, in order to expedite the cutting of the grooves in the substrate.

With regard to claim 19, member 3 is a saw.

With regard to claim 20, the type of object formed is an intended use for the process.

With regard to claim 22, see blade 3 in figure 1.

With regard to claim 23, as best understood by the examiner, member 3 could act as a carrier for an abrasive material which is placed in the spaces of the machined microreliefs.

With regard to claims 24-25, Official Notice is taken that it is well known to use a chemical etching solution (cl 24) and to planarizingly coat (cl 25) microrelief surfaces in order to finish them.

6. Claims 15, 21, and 26 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. patent 4,016,855 to Mimata in view of U.S. patent 5,868,125 to Maoujoud.

With regard to claim 15, Mimata teaches a first machining step as described above. Mimata does not, however, teach a second substep for finishing. Maoujoud teaches machining wherein a first step comprising blank forming and a second step comprising finishing comprise the machining step.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided Mimata with a machining process wherein blank forming and finishing occur in first and second substeps, in light of the teachings of Maoujoud, in order to provide a method wherein the removal of the materials from the substrate may occur in a more efficient manner.

With regard to claim 21, Mimata teaches the invention as described above, but does not teach forming the microreliefs using a V profile abrasive blade. Maoujoud teaches an abrasive tool of approximately V shape for cutting objects. See abstract.

With regard to claim 26, Official Notice is taken that it is well known in the art to use polishing blades with different sizes of grits to polish different areas differently.

7. Claims 14, 17, and 22 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. patent 351,874 to Maloy.

With regard to claim 14, Maloy teaches making microcomponents by machining them and then cutting them out of a substrate. See especially col 1, lines 45+ which discuss splitting (cutting) along line 8. Maloy does not however teach carrying out this process in order to form microreliefs. However, the type of object formed is merely an intended use for it, and a wide variety of other such objects could be formed using the same process; and it would have been obvious to one of ordinary skill in the art at the time of the invention to have formed microreliefs using this process instead of the larger stones simply by changing the dimensions of the objects formed.

With regard to claim 17, a single tool is used.

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With regard to claim 22, a saw with a blade having plane and parallel faces is used.

8. Applicant's arguments with respect to claims 14, 16, 17, 19, and 20 have been considered but are moot in view of the new ground(s) of rejection. Also, the rejection presented in the previous office action under 35 U.S.C. 112 second paragraph with respect to the motion depicted in figure 5B has been withdrawn.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information


10. Official documents related to the instant application may be submitted to the Technology Center 3700 mail center by facsimile at (703) 305-3579/3580. Should

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Applicant desire to submit a DRAFT response to the Examiner by facsimile transmission, then Applicant should contact the Examiner at the number below for instructions concerning the transmission of DRAFT documents. Applicant is reminded to clearly mark any facsimile transmission as "DRAFT" if it is not to be considered as an official response. Examiner Blount may be contacted at the Patent Office between the hours of 9:00 am to 5:30 P.M. Monday through Friday.

11. Any inquiry concerning this communication should be directed to Examiner Steven Blount at telephone number (703) 305-0319.

SB
2/8/02


S. THOMAS HUGHES
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700